

Collections of *Galerina* (Agaricales, Fungi) Made by J.B.Cleland and Housed in the State Herbarium of South Australia

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Wood, A. (2005). Collections of *Galerina* (Agaricales, Fungi) made by J.B.Cleland and housed in the State Herbarium of South Australia. *Proceedings of the Linnean Society of New South Wales* **126**, 181-196.

Twenty-five collections by J.B. Cleland of *Galerina* (or which have been regarded as possibly belonging to *Galerina*) have been studied and their true status has been determined. Details are provided of the size and state of the collections and results are given of microscopic analysis of the material. The results have been evaluated in the light of recent taxonomic studies and suggestions are provided about the taxonomic position of each of the collections, together with discussions of the reasons for the conclusions. Ten of the collections have been shown to belong to genera other than *Galerina*. All the remaining collections have been assigned to previously described species of *Galerina* - *G. lurida*, *G. marginata*, *G. muscolignosa*, *G. unicolor*, *G. vittiformis*.

Manuscript received 16 December 2003, accepted for publication 20 October 2004.

KEYWORDS: Agaricales, Australia, Cleland, *Galerina*, herbarium, mushrooms.

INTRODUCTION

J.B.Cleland (1878-1971) was one of the great collectors of Australian larger fungi over a long period, first in New South Wales and later and particularly in South Australia. His work on fungi was largely summarised in his 'Mushrooms and Toadstools and other Larger Fungi of South Australia' (1934-1935), though he continued collecting until very late in his life. The basic material of his book has been revised by Grgurinovic and published as 'Larger Fungi of South Australia' (1997). The collections of *Galerina* were re-examined as part of the work for a forthcoming volume by Australian Biological Resources Study on some genera of the Family Cortinariaceae in Australia (in press 2005). A summary of these results is published there, but this paper in addition provides a full documentation of the status of each of the collections, notes on the size and state of each collection together with details of the original Cleland collecting notes. Some of these collections were in part discussed by Cleland in his first paper, Australian Fungi: Notes and Descriptions. No. 1 (Cleland and Cheel 1918). Cleland's understanding of concepts of European species was guided particularly by the work

of Rea (1922). The earlier work of Masee (1892-1895) was important for Rea and the illustrations of Cooke (1881-1891) were also a major influence. The use of European names should be interpreted in this light, with due consideration for later European use of these same names, particularly by Watling and Gregory (1993).

MATERIALS AND METHODS

Material was examined in 5% KOH and stained with Congo Red. Spores were examined and drawn at x2000. Cystidia were drawn at x1000. Spore shapes were named following the nomenclature of Bas (1969). Spore details are reported as a range of spore sizes, mean length and width (\bar{X}) and mean ratio of length:breadth (Q). Ornamentation of the spores was recorded in terms of height (high, medium or low), width (coarse, fine) and shape of the tip of the ornamentation (blunt, pointed).

Cystidia shapes were described following the categories of Vellinga (1988). In many cases cystidia could not be recovered. Measurements of the cystidia, when the form is lageniform, are

recorded as length, width of the basal portion, width of the neck and width of the apex if it is inflated. In most cases, the collections were originally described as being species of *Galera*. As it was later determined that this was not a valid generic name, the name *Galerina* became the universally accepted generic name for these species (see Donk 1962).

The species are arranged alphabetically according

to the species names on the packets. The collections were first located in the Waite Agricultural Research Institute (ADW) and later the whole of the Cleland material was transferred to the State Herbarium of South Australia (AD). For completeness, both the earlier and the current numbers are cited. However the AD numbers are the current valid numbers.

COLLECTIONS EXAMINED

1. *Galerina (Galera) campanulata* AD-C 42538 (ADW 13793)

Microscopic details: Spores 15.0–18.0 x 9.6–10.5 μm , \bar{X} = 16.3 x 10.3 μm , Q = 1.59, strongly ferruginous, oval to elliptic, wall thick, smooth, with no visible perispore, with broad very evident apical germ-pore. Cystidia sparse, scattered, fusiform to lageniform, never capitate. Basidia clavate to pyriform, two-spored. Pileal surface mostly collapsed, but seems clearly to be a distinct thin layer of thin-walled globose cells.

Packet label:

Galerina (Galera) campanulata

Milson Is. 10/11/14 J.B.Cleland

+Pencil annotation

(= *Galerina*)

on rich soil Milson Is (Sydney) NSW

Cleland Notes: (sparse)

Gills narrow, ascending, adnate. Cap pallid brown. Stem hollow, almost white (brownish tint).

On rich soil.

Milson Island

10/11/14

Galera

Spores 13.6–15.5 x 8.5 μm .

Collection: The collection consists of six fruit-bodies, each about 1 cm in diameter, cap convex to conical, with a long thin stipe.

Notes: This species was named by Cleland as *Galera campanulata* Masee, a species which in the British Fungus Flora (Dennis, Orton and Hora, 1963) is regarded as a doubtful species, and is not recorded by Watling and Gregory (1993) or Moser (1983). Cleland, in the discussion of this species in the 1918 paper, compares it to *Galera siliginea* and also discusses differences between this species and *Galera tener*. Since these are now regarded as *Conocybe* species, this suggests that Cleland regarded this collection as belonging to what can now be regarded as *Conocybe*. The description of this species by Rea (1922) probably represents current interpretation of this species at the time: pileus deep cinnamon, persistently campanulate; stipe pallid, base darker; gills tawny cinnamon; spores 12 x 7 μm ; smell strong; by roadsides.

The microscopic features detailed above, smooth spores with germ-pore and cellular cuticle, seem to clearly indicate a species of *Conocybe*. The cystidia of the related species, *C. tener*, are lecythiform with a distinct globular apex. Hence if the rarely found cystidia are representative of the collection, it is not close to *Conocybe tener*, but belongs in a quite different section of the genus.

If the few cystidia found above are regularly present, this collection could still be a *Conocybe* but of a different section. At this stage the identity of the collection remains in doubt, but the genus is clear, the smooth spores with apical germ-pore could not be *Galerina*, particularly with a cellular cuticle. The other less likely possibility would be a species of the genus *Pholiotina* section *Piliferae*, but this genus is less often found in Australia than *Conocybe*.

2. *Galerina (Galera) campanulata* AD-C 42539 (ADW 13794)

Microscopic details: Spores 10.2–11.1 x 7.2–8.4 μm , \bar{X} = 10.6 x 8.0 μm , Q = 1.34, pallid dull ferruginous, blunt ovoid, apex depressed with fairly indistinct germ-pore, smooth, with no visible perispore, wall visibly thickened. No cystidia could be recovered. Basidia clavate to pyriform, clearly four-spored.

Packet label:*Galera campanulata*

Neutral Bay

18/12/14

J.B.Cleland

+ Pencil annotation

Galerina

on wet ground in lawn (Sydney) NSW

Cleland Notes: Collection envelope has note on outside –

Cap conico-campanulate, yellowish brown, darker towards summit, edge slightly striate. Gills pale fawn.

Stem white, hollow, brittle, shining.

On wet ground in lawn. Neutral Bay. 18/12/14.

Spores yellow brown, oval, with several small vacuoles, 13–13.8 x 7.7–8.5 μm .

A single paper slip inside the envelope has the same details with the following variation

Cap about 1/2" diameter. Conico-campanulate. Slightly sticky. Tawny brown, darker towards summit.

Slightly striate.

Gills pale cream.

Among grass

Neutral bay

19/2/14

Collection: The collection consists of a single fruit-body.

Notes: This collection seems clearly related to the previous collection, though the spores seem different. Possibly they represent two-spored and four-spored variants of the same species. The absence of cystidia makes more certain results almost impossible. See under the previous collection (AD-C 42538) for more discussion of the other possibilities.

3. *Galerina (Galera) lateritia* AD-C 42540 (ADW 13788)

Microscopic details: Spores 10.8–12.9 x 7.5–8.4 μm , \bar{X} = 12.2 x 8.1 μm , Q = 1.51, clear ferruginous, ovoid, wall smooth, apex a little thin, with an indistinct germ-pore, with no visible perispore. Basidia clavate to pyriform. No cystidia could be located. Pileal surface collapsed and difficult to reconstruct, but seems to be a thin complete layer of globose thin-walled cells.

Packet label:*Galera lateritia*

Adelaide

22/9/13

J.B.Cleland

+ Pencil annotation

Galerina

Amongst grass

S. Aust.

Cleland Notes:

Pileus conical 3/4 x 3/4", very pale fawnish white, ? slightly striate. Stem white 2", slightly bulbous, attenuated up, finely striate, no ring, hollow. Gills fairly close, narrow, pale fawn, just adnexed, hymen... free.

Among moss.

Adelaide.

22/9/13.

Collection: The collection consisted of three good substantial fruit-bodies, each about 1cm in diameter.

Notes: This, and the next two collections probably should be regarded as the same species as the characters are very similar but this would require cystidia to decide the issue. Clearly they are not *Galerina* as they have

THE CLELAND COLLECTIONS OF *GALERINA* (FUNGI)

a cellular cuticle and smooth spores. Clearly on the characters available, this is a species of *Conocybe*, or possibly a *Pholiotina* Section *Piliferac*, but cystidia and other features would be needed to decide the issue. *Conocybe* seems to be the most likely genus.

Galerina lateritia is now regarded as being the same as *Conocybe lactea*, which is a very pale species.

4. *Galerina (Galera) lateritia* AD-C 42541 (ADW 13789)

Microscopic details: Spores 13.5–14.1 x 7.5–8.7 μm , \bar{X} = 13.6 x 8.2 μm , Q = 1.70, deep brown to chocolate in mass, ovoid, thick-walled, smooth, with clear narrow apical germ-pore. Basidia pyriform, mostly partly collapsed. No cystidia could be recovered, even though the material appeared to be in good condition.

Packet label:

<i>Galera lateritia</i>		
Sydney	20/3/14	J.B.Cleland
+ Pencil annotation		
<i>Galerina</i>		
Amongst grass,	Sydney, NSW	(+ formalin specimen)

Cleland Notes:

Pale brownish fawn, apex particularly conical, about 3/8 x 3/8", apex acute to obtuse. Gills reddish brown, narrow, crowded, just free. Stem whitish, silky. Hollow, attenuated up, thin, 1 3/4".

Amongst grass; Sydney 20/3/14

Galera ? lateritia. Formalin specimen.

Other collection like this has spores brown, 12.5 x 7–7.6 μm .

Collection: The collection is of 6-7 fruit-bodies which are in good condition; the dried fruit-bodies are up to 1 cm in diameter.

Notes: This is clearly not a *Galerina*. This collection and the next one clearly have a cellular cuticle and either belong to the genus *Conocybe* or to *Pholiotina* Section *Piliferac*. These three collections may represent variants of the same species or they may represent two close but different species. They clearly do not represent *Conocybe lateritia* as it is now understood, as this is a very pale species. At the moment it seems best to regard all three collections as belonging to the same species.

5. *Galerina (Galera) lateritia* AD-C 42542 (ADW13790)

Microscopic details: Spores 12.0–15.0 x 8.4–9.6 μm , \bar{X} = 12.8 x 8.7 μm , Q = 1.47, deep ferruginous, oval, thick-walled, smooth, with no visible perispore, with distinct apical germ-pore; basidia large, pyriform, often collapsing. No cystidia of any kind could be recovered.

Packet label:

<i>Galera lateritia</i>		
Milson Is.	29/11/14	J.B.Cleland
+ Pencil annotation		
<i>Galerina</i>		
Amongst grass	Milson Island, NSW	
Kew No 6	see also Formalin Specimen No 27	

Cleland Notes:

Conical then expanded to become broadly conical with pointed umbo, umbo dark tan, rest pale tan, densely striate. Gills narrow, very crowded, adnate, yellowish brown. Stem 1 3/4" white, finely streaked, attenuated upwards, hollow, base slightly bulbous.

Amongst grass Milson Island 29/11/14

Spores yellow brown, oval slightly oblique, 12 x 8 μm .

Collection: The collection has two fruit-bodies, together with three fruit-bodies glued to the back of the

collecting slip, each about 1 cm diameter.

Notes: This is clearly not a *Galerina* species, because of the smooth spores with germ-pore. Obviously it is close to the previous collections. In the absence of any cystidia, it should be regarded as another collection of the previous species, i.e. a *Conocybe* or *Pholiotina* Section *Piliferae* species. The former should be regarded as the more probable in terms of the known frequency of the two genera in Eastern Australia.

6. *Galerina mycenoides* AD-C 42543 (ADW 13715)

Microscopic details: Spores 7.5–8.1 x 4.5–5.1 μm , \bar{X} = 7.9 x 4.9 μm , Q = 1.62, pale golden, broadly ovoid, thin-walled, smooth, without apical germ-pore, with no visible perispore. Basidia narrowly clavate, four-spored. Cheilocystidia abundant 60–80 x 3–8 μm , cylindrical to fusiform or narrowly lageniform, apex often slightly enlarged 4–7 μm ; no pleurocystidia could be recovered.

Packet label:

Pholiota mycenoides

Orange NSW

10/10/16

J.B.Cleland

+Pencil annotation

Galerina mycenoides

on ground

Cleland Notes:

Pholiota. Cap convex then expanded, centre dimpled when moist, somewhat chestnut and striate, drying to pallid tawny white. Gills adnate, cinnamon brownish, moderately close. Stem 1", often wavy, brownish tan, white down often near base, base a trifle swollen, slightly hollow. Ring as superior whitish fibres, often obscure, sometimes very definite.

On ground. Orange 10/10/16.

Spores 7–8.5 x 4.2–4.5 μm .

Collection: The collection is of numerous fruit bodies singly in granules of clay soil, all dirty and granular.

Notes: This is not a species of *Galerina* as the spores were thin-walled and smooth, without a germ-pore. Nor was this a species of *Pholiota* Section *Aporini*, as the spores are thin-walled and too pale. The collection probably represents a species of *Tubaria* even though the spores were not easily collapsing, nor were they reniform. It probably comes closest to *Tubaria rufofulva* which also has similar cheilocystidia, though the cap colours seem somewhat different. See Grgurinovic (1997) and Moser (1983) for other related species. *Galerina mycenoides* has larger, finely rough spores, and other different features. See also Rea (1922), who places *Galerina mycenoides* in *Pholiota*, and reports it as growing among moss.

7. *Galera hypnorum* AD-C5506 (ADW 13787)

Microscopic details (from packet a): Spores 12.3–13.2 x 6.6–7.9 μm , \bar{X} = 12.6 x 6.9 μm , Q = 1.80, well coloured, elliptic to amygdaliform, plage usually obvious, flat, smooth and usually with a distinct rim, perispore thin, mostly obvious, not swelling or loosening, ornamentation moderately low to low, coarse, blunt. Cheilocystidia fairly sparse, broadly lageniform; pleurocystidia absent.

Packet label:

Galera hypnorum

Greenhill Rd.,

27/6/21

J.B.Cleland

+ Pencil annotation

Holotype *Galerina nyula*

Amongst moss Adelaide

Cleland Notes:

Galera hypnorum

Up to 1/4", campanulate, umbonate, striate, watery cinnamon, paler when dry. Gills tawny cinnamon,

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tending to be distant, adnate. Stem up to 1", brownish cinnamon, slender. Amongst moss.
Greenhill Road 27/6/21
Spores oblique, 11 to over 12.8 x 7.5, yellow brown.

Collection: There are two sub-packets –

- a. with fragments of 2-3 fruit-bodies, with the label "winged spores".
- b. with fragments of 4-5 fruit-bodies, with the label "ellipsoid spores".

There are no separate collecting notes for these individual fruit-bodies.

Packet b. is clearly the collection referred to in Grgurinovic as the other collection. From it the following details were found:

Microscopic details: Spores 11.7–12.6 x 6.0–8.7 μm , \bar{X} = 12.03 x 8.28 μm , Q = 1.45, well coloured, ovoid to slightly elliptic, plage not obvious, a vague flat area above the apiculus, perispore not visible, ornamentation low to moderately low, fairly coarse, blunt. Cystidia could not be recovered.

Notes: Sub packet a. Material clearly corresponds to the description of *Galerina nyula* in all the details published by Grgurinovic (Grgurinovic 1997), and doubtless corresponds to some of the records of *Galerina hypnorum* in Australia. However it is quite distinct from *Galerina muscolignosa* (see Wood 2001), which has distinctly calyptrate spores and which seems to be the common species in much of Eastern Australia. Also *Galerina oreophila* may also be confused with *Galerina nyula*, but *Galerina oreophila* has more distinctly lageniform cystidia, slightly broader spores, a mixture of two-spored and four-spored basidia and an alpine or sub-alpine habitat.

Sub packet b. Material has microscopic features that suggest it may be a collection of a species of *Cortinarius* because of the lack of cystidia and the spores without a plage and without visible perispore. It probably represents a species of the subgenus *Telamonia*, but further identification will await more work on that sub-genus, and it would be made more difficult by the lack of any macroscopic field details.

8. *Galerina nyula* AD-C5507 (ADW 13785)

Microscopic details: Spores 7.8–9.3 x 4.8–5.4 μm , \bar{X} = 8.9 x 5.2 μm , Q = 1.72, fairly well coloured, elliptic to vaguely amygdaliform, plage flat, without rim, not obvious, appears smooth, perispore thin, often not obvious, often somewhat loosening but not fully calyptrate, ornamentation low to very low, somewhat coarse, blunt. The material was too fragmentary for cystidia to be recovered.

Packet label:

Galera hypnorum

Lisarow 5/8/16 J.B.Cleland

+ Pencil annotation

Galerina nyula

Lisarow NSW

Cleland Notes: No field notes were present.

Collection: The collection consists of fragmentary parts of about three fruit-bodies, among moss, with conical mycenoid caps, small and conical to convex with long thin stems. Clearly among moss.

Notes: The distinctive characteristics of the spores indicate that this collection does not represent *Galerina nyula*. Rather it should be regarded as belonging to *Galerina muscolignosa* despite a smaller degree of loosening of the perispore on the spores, because of the spore size and the level of ornamentation on the spores.

9. *Galera hypnorum* AD-C 5508 (ADW 137867)

Microscopic details: Spores 7.5–9.6 x 5.4–6.3 μm , \bar{X} = 9.0 x 5.3 μm , Q = 1.69, well coloured, elliptic to slightly amygdaliform, plage slightly flatter, with no distinct rim or smooth patch, perispore thin, often a little loosening or slightly calyptrate, ornamentation low, a little coarse, blunt. No cystidia could be recovered from the limited material.

Packet label:*Galera hypnorum*

Mosman

23/7/16

J.B.Cleland

+ Pencil annotation

Galerina nyula

amongst moss

Mosman (Sydney) NSW

Miss Clarke (Watercolour) No 133

Formalin specimen 229

Cleland Notes:

Galera. Cap conico-campanulate 1/4", base 5/16" high, ?without definite umbo, dark yellow brown, striate, drying pallid tan. Gills moderately distant, ascending, adnate, yellow brown, not ventricose. Stem up to 1", slender, yellow brown.

Amongst moss.

Mosman

Collection: The collection consisted only of fragmentary material.

Notes: Comparisons with Collection AD-C 5507 above seem to indicate that it is the same species, and the same remarks apply. This collection also represents *Galerina muscolignosa*.

10. *Galera hypnorum* AD-C 5509 (ADW 13783)

Microscopic details: Spores 8.4–9.6 x 5.4–6.3 μm , \bar{X} = 9.0 x 5.6 μm , Q = 1.60, well coloured, elliptic, slightly amygdaliform in profile, plage smooth, flat, with a slight rim, ornamentation very low, moderate, rounded, perispore clearly present, thin, regularly loosening, sometimes variously in bubbles. No cystidia could be recovered from the limited material.

Packet label:*Galera hypnorum*

J.B.Cleland, no locality; no date

+ Pencil annotation

*Galerina nyula*Cleland notes:

Only torn fragments in packet; only a few scraps can be partially reconstructed - *Galera* (new sp. ?)

...apex of stipe mealy...

...moss...

Collection: The collection was very fragmentary, with no intact fruit-bodies remaining; one partial cap remained and produced the spores described above; the material was too fragmentary for cystidia to be recovered.

Notes: Comparison with Collections AD-C 5507 and AD-C 5508 above seems to indicate that they represent the same species. Clearly they do not represent *Galerina nyula* for the reasons given above. It fits best within *Galerina muscolignosa*.

11. *Galera hypnorum* AD-C 5510 (ADW 13784)

Microscopic details: Spores 10.5–12.6 x 6.3–7.5 μm , \bar{X} = 11.7 x 7.1 μm , Q = 1.66, well coloured, ovoid, some slightly pointed at apiculus, only rarely slightly amygdaliform in profile, plage not visible or distinct, without a rim, no visible perispore, ornamentation low to very low, a little coarse, rounded. Basidia often or mostly, two-spored. No cystidia could be recovered.

Packet label:*Galera hypnorum*

J.B.Cleland no locality or date

THE CLELAND COLLECTIONS OF *GALERINA* (FUNGI)

+Pencil annotation

'*Galerina nyula*'

vide Miss Clarke Watercolour 133

Formalin spec 229

(Perhaps same coll as AD-C 5508 ? G.Bell 02)

Cleland notes

No macroscopic details, a single slip has, in pencil (JBC) - spores 8–8.5 x 6 µm, oval, peculiar double outline, ?wing at one end, yellow brown, edge a little turned in when young, so as to be globular (with a sketch of a globular head and two spores, clearly calyptrate).

And around it, in the same hand (JBC), in fine ink

Galera hypnorum Batsch

Vide Miss Clarke Picture 133 Formalin specimen 229

Rec. in Trans. Roy. Soc. SA XLII, 1918 p 119

Collection: The collection consists of about seven fruit bodies in fair condition. The collection was clearly made from soil with moss.

Notes: Cleland's second set of notes (above) presumably may mean that he thought that it was the same species as the illustration he cited. He does not necessarily mean that this was a comment about this collection or that this one was the one that was painted by Miss Clarke.

As the spores figured in Cleland's notes are clearly calyptrate, and the spores of the current specimen are clearly not calyptrate, one suspects that the written slip in the packet does not correspond with the specimen and has been misplaced from elsewhere. This is confirmed by the spore sizes cited by Cleland (8–8.5 x 6 µm) while the present specimens have much larger spores (10.5–12.6 x 6.3–7.4 µm).

From the details available from the specimens, as the spores are mostly produced on two-spored basidia, the spore size and morphology suggest this represents a collection of *Galerina vittiformis* possibly var. *pachyspora*. Final certainty could not be produced from the details that could be gained from the specimens. However, it is clear that the specimens do not represent *Galerina nyula*.

12. *Pholiota pumila* AD-C 42544 (ADW 13720)

Microscopic details: Spores 7.5–9.0 x 4.2–4.8 µm, \bar{X} = 8.2 x 4.8 µm, Q = 1.71, golden, fairly thin-walled, elliptic to slightly amygdaliform, plage usually not marked, flat, smooth, sometimes with a small rim, perispore thin, sometimes a little swollen and occasionally slightly loosening, ornamentation low, fine, a little blunt. A few narrow lageniform non-capitate cystidia were recovered, both cheilocystidia and pleurocystidia present and of similar morphology.

Packet label :

Pholiota pumila

Spit, Sydney 9/7/16 Amongst moss J.B.Cleland

+Pencil annotation

Galerina

formalin specimen No 216

Cleland notes:

Pholiota. Cap 3/16", broadly conical, faintly striate, apex rather pointed, yellow brown, finely granular, with less hygrophanous appearance. Gills adnate, very pallid brown, rather distant, with short ..! Stem 5/8", attenuating up, moderately stout, pallid brown, somewhat silvery mealy, slightly hollow, ring superior ?definite.

Amongst moss.

Spit.

Collection: The collection consists of only a few small fruit-bodies, clearly among moss. Dried fruit-bodies small and mycenoid.

Notes: The finely rough spores clearly indicate a species of *Galerina*. If Cleland's notes are accurately interpreted, with a 'ring', then the specimens almost certainly fit *Galerina lurida*. Though the spores seem more finely rough, all the other features fit *Galerina lurida* well. It was not possible to detect remains of a ring on the stipe of the dried specimens, but this would not be unusual with this species, where the texture of the ring is variable and hence it persists in differing degrees in mature specimens. On balance, this collection should be regarded as being of *Galerina lurida*.

13. *Pholiota pumila* AD-C 42545 (ADW 13721)

Microscopic details: Spores 7.8–9.0 x 4.5–5.4 μm , \bar{X} = 8.4 x 5.0 μm , Q = 1.69, Golden ferruginous, elliptic to amygdaliform, plage large, flat, smooth, sometimes with a distinct rim, perispore thin, obvious, sometimes swelling irregularly and a little loosening, but not calyptrate, ornamentation low, fairly fine, blunt. Cheilocystidia fairly frequent, narrowly lageniform, apex distinctly rounded to slightly capitate, 40–50 x 8–12 x 3–5 x 6–9 μm , pleurocystidia similar, fairly frequent.

Packet label:

Pholiota pumila

Amongst moss

Mosman

13/8//16

J.B.Cleland

+Pencil annotation

Galerina

Cleland notes:

Pholiota.....moss

Cap 3/8", convex then nearly plane, trace fibres, dark reddish brown, striate.

Gills reddish brown, adnate, moderately close. Stem 1", dark brown, slightly striate, solid

? Film of rather dirty white ring. 13/8/16

Collection: The collection consists of three fruit-bodies, in good condition. The specimens are clearly more substantial than those for collection 42544.

Notes: Details of this collection are similar to those for collection AD-C 42544. Despite the differences in habit, they both should be regarded as specimens of *Galerina lurida*. Clearly, with rough spores, this is not a *Pholiota*. These collections may indicate that *Galerina lurida* is a somewhat variable species.

14. *Galerina subifinosa* AD-C 42546 (ADW 13792)

Microscopic details: Spores 10.5–12.0 x 7.5–8.7 μm , \bar{X} = 11.4 x 8.2 μm , Q = 1.40, ferruginous, sometimes a little pale, ovoid or slightly elliptic to slightly amygdaliform, plage flat, smooth, with a low rim, not very strongly developed, perispore not visible, ornamentation moderate, coarse, blunt, apex not mucronate. Basidia mostly collapsed, clavate, mostly four-spored, with a few two-spored. Cheilocystidia fairly common, narrowly lageniform, apex rounded, not capitate, 50–75 x 7–14 x 2–7 x 5–7 μm . Similar pleurocystidia also present.

Packet label:

Galerina subifinosa

Mosman 30/7/16

J.B.Cleland

among moss

+Pencil annotation

? *G. rubiginosa*

? misreading of Cleland handwriting (G.Bell 02)

Cleland notes:

Spores 10.5–11 x 7.5 μm , oblique, oval, finely rough, yellow brown.

Cap 3/8", base to high, conico-campanulate, obtuse umbonate, dark chestnut, coarsely ribbed to umbo.

Gills dark reddish brown, adnate, broad, moderately distant.

Stem to 1 1/4", slender, dark brown, slightly, hollow.

Among moss. Mosman 30/7/16

Collection: The collection consists of a single fruit-body only.

Notes: This collection seems clearly to belong to Section *Galerina* of *Galerina* because of the presence of clear pleurocystidia. In this group it seems to be part of the *Galerina vittiformis* complex. It does not correspond with *Galerina vittiformis* var. *pachyspora* because of the four-spored basidia, darker cap colours and slightly different spore shape. The name *Galerina subifinosa* appears to be an unpublished manuscript name and hence has no status. It seems probable that it represents a misreading of Cleland's label, which was originally intended to be *Galerina rubiginosa*. This is given added support by the fact that apart from these two collections, no *Galerina rubiginosa* collections are found in the Cleland collections, when that species was recorded in the 1918 paper. *Galerina rubiginosa*, as it is now understood, is one of the species within the *Galerina vittiformis* complex, and it has been split between several species. The Cleland collections, with darker cap colours, slightly smaller spores and four-spored basidia do not clearly fit any of the current species or varieties. The nearest would be *Galerina vittiformis*, possibly as a new form or variety. It may represent *Galerina vittiformis* var. *vittiformis* f. *tetraspora* (see Singer and Smith 1964, and Breitenbach and Kränzlin 2000). This collection seems to correspond to the one quoted by Cleland in the 1918 paper, with the note "Miss Clarke Watercolour No. 132".

15. *Galerina subifinosa* AD-C 42547 (ADW 13791)

Microscopic details: Spores 10.5–12.6 x 6.6–7.8 µm, \bar{X} = 11.6 x 7.4 µm, Q = 1.58, ferruginous, sometimes a little pale, ovoid or a little elliptic to slightly amygdaliform in profile, with distinct flat smooth plage, with slight rim, with no visible perispore, ornamentation moderate to low, coarse, blunt. Basidia clavate, much collapsed and reviving poorly, four-spored, with only a few two-spored. Cheilocystidia mostly collapsed, narrow lageniform, longish, not capitate. Similar pleurocystidia also clearly present.

Packet label:

Galerina subifinosa

Mosman NSW amongst moss 30/7/16 J.B.Cleland

+Pencil annotation

(*Galerina rubiginosa*)

(probably a misreading of J .B. Cleland handwriting G. Bell 02)

Cleland notes:

Pileus campanulate, 3/16" high, 3/8" broad, almost chestnut, striate, striae darker, not definitely viscid.

Gills adnate, reddish brown, moderately distant.

Stem slender 1", reddish brown, slightly mealy, trace of being hollow.

Amongst moss Mosman 30/7/16

Collection: The collection consists of three fruit-bodies, in fairly good condition, fairly small, with some sandy soil and moss.

Notes: This collection is clearly a *Galerina* species, and probably represents another collection of the species found above in collection AD-C 42546. Its identity is discussed fully there.

16. *Galerina (Pholiota) subpumila* AD-C 11883 (ADW 12930)

Microscopic details: Spores 9.3–10.2 x 6.0–6.6 µm, \bar{X} = 9.5 x 6.4 µm, Q = 1.49, well coloured, golden, wall slightly thick, quite smooth, apical germ-pore small or narrow, but clearly distinctly present. Cheilocystidia narrowly lageniform, not capitate, 30–40 x 4–8 x 10–13 µm, a few similar pleurocystidia also present.

Packet label:

Pholiota subpumila

Greenhill Rd., 12/6/26 J.B.Cleland

+Pencil annotation

Holotype

(Greenhill Rd. runs between SE corner of Adelaide and summit of Mt. Lofty)

Cleland notes:

Pileus up to 5/8" to 1 1/8", convex then flattened or a little depressed, umbonate when young, sometimes a little wavy, shining waxy looking, dark tan.
 Gills rather close, adnate or slightly decurrent, watery brown, rather triangular.
 Stem equal or slightly attenuated upwards, 1 1/2", whitish, fibrillose with a slight tinge ? of cap colour.
 Spores yellow brown 8–9.5 x 5.5 µm, oblique.

Collection: The collection consists of five fruit-bodies, in good condition, with moss.

Notes: With smooth spores, which also have a distinct germ-pore, the collection clearly represents a *Pholiota*, not a *Galerina*. It has been well re-described by Grgurinovic (1997) as *Pholiota subpumila* and the current study has confirmed the details given there.

17. *Galerina (Pholiota) subpumila* AD-C 12393 (ADW12931)

Microscopic details: Spores 8.7–9.9 x 6.0–7.2 µm, \bar{X} = 9.09 x 6.45 µm, Q = 1.41, golden, wall distinctly thickened, completely smooth, with narrow apical germ-pore, usually narrow but always distinctly present. Cheilocystidia narrow lageniform to lageniform, clearly present and fairly frequent, less frequent similar pleurocystidia also present.

Packet label:

Pholiota subpumila

Greenhill Rd.,

11/6/27

J.B.Cleland

+Pencil annotation

On moss

(Runs between SE corner of Adelaide and summit of Mt. Lofty)

Cleland Notes:

No notes of macroscopic details.

Spores yellow brown, 9 x 6.5–7 µm

On moss

Collection: The collection consists of five fruit-bodies in good condition, with some soil and debris.

Notes: This collection clearly matches all the features of *Pholiota subpumila* - see discussion under the previous collection and Grgurinovic (1997).

18. *Galerina (Pholiota) subpumila* AD-C 12104 (ADW 12929)

Microscopic details: Spores 7.8–10.5 x 5.7–6.6 µm, \bar{X} = 8.9 x 6.2 µm, Q = 1.44, well coloured, golden, ovoid, wall moderately thickened, smooth, with small distinct apical germ-pore, constantly and clearly present. Cheilocystidia fairly frequent, fusiform to narrowly lageniform, pleurocystidia less common, but clearly present, of similar morphology.

Packet label:

Pholiota subpumila

Waterfall Gully, SA

27/6/21

J.B.Cleland

+Pencil annotation:

amongst moss

Miss Fiveash watercolour 24

(34° 58' S; 136° 41' E)

Cleland notes:

Cap 5/8" convex, umbonate (obtuse), pallid yellow brown, edge rather mealy. Gills dingy greyish brown, decurrent (slightly), moderately close, watery cinnamon. Stem up to 1 1/2" pallid whitish, with a superior well-marked whitish ring, solid. Flesh watery. Amongst moss. Waterfall Gully 27/6/21

THE CLELAND COLLECTIONS OF *GALERINA* (FUNGI)

Base of stem ?occasionally swollen.

Spores rather a dull dark brown, thin-walled, ellipsoid but a little irregular, thick-walled $8 \times 6.4 \mu\text{m}$.

Collection: The collection consists of numerous fruit-bodies, in good condition, with soil and debris.

Notes: Clearly this collection is *Pholiota subpumila*, as are the previous collections. For a discussion of this species, see there and Grgurinovic (1997).

19. *Galerina (Pholiota) subpumila* AD-C 22424 (ADW 12928)

Microscopic details: Spores $8.4\text{--}9.6 \times 5.1\text{--}6.0 \mu\text{m}$, $\bar{X} = 9.1 \times 5.6 \mu\text{m}$, $Q = 1.62$, strongly and deeply coloured, elliptic, profile distinctly amygdaliform, without apical callus and apex not less ornamented, plage large flat, smooth, obvious, with small rim, ornamentation high, coarse, blunt, perispore obvious, thick, swelling, but only occasionally slightly loosening, never calyptrate. Cheilocystidia and pleurocystidia both clearly present, similar, narrowly lageniform, apex slightly capitate but never abruptly so, $45\text{--}50 \times 3\text{--}7 \times 10\text{--}13 \mu\text{m}$.

Packet label:

Pholiota subpumila

Eagle on the Hill

6/6/32

J.B.Cleland

+Pencil annotation

($34^{\circ} 59''$ S ; $138^{\circ} 40''$ E)

near moss

Galerina

Cleland notes:

Pileus ochraceous tawny XV $\frac{1}{2}$ " slightly convex, slightly umbilicate, substriate. Gills ochraceous tawny, adnate to decurrent, rather distant. Stem $\frac{3}{4}$ ", same colours, slender, slightly fibrillose. Ring indefinite, rather distant, stem cartilaginous. Flesh same colour. Near moss.

Spores golden brown, $8 \times 4.5 \mu\text{m}$, obliquely elliptic, perhaps slightly rough.

Collection: This collection consists of three small fruit-bodies on a twig of wood, with some soil and debris. No velar remains are now visible on the stipe. Clearly the original fruit bodies were quite small.

Notes: Because of the rough spores, with plage, without germ-pore, this collection is clearly not of *Pholiota subpumila*, but clearly represents a species of *Galerina*. The species that it might represent are *G. marginata* or *G. lurida*. It is probably best regarded as a small specimen of *Galerina marginata*, since *Galerina lurida* is clearly not lignicolous and it has spores and cystidia that are slightly different from the present collection.

20. *Galerina (Pholiota) subpumila* AD-C 22425 (ADW 12932)

Microscopic details: Spores $8.4\text{--}9.3 \times 5.1\text{--}6.0 \mu\text{m}$, $\bar{X} = 8.9 \times 5.6 \mu\text{m}$, $Q = 1.59$, well coloured, ovoid to elliptic, amygdaliform in profile, plage obvious, smooth, mostly with a distinct rim, ornamentation obvious, moderately low, coarse, blunt, perispore marked, swollen, with some slight loosening but never calyptrate. Cheilocystidia and pleurocystidia clearly present, but not abundant, of similar morphology. Narrowly lageniform, apex rounded or sometimes vaguely capitate, $40\text{--}50 \times 12\text{--}16 \times 4\text{--}7 \times 4\text{--}9 \mu\text{m}$.

Packet label:

Pholiota subpumila

Coromandel Valley

26/6/27

J.B.Cleland

+Pencil annotations

Galerina

amongst moss

Clarendon, Coromandel Valley, SA.

Cleland notes:

Pholiota. Moss. Cap near Sudan Brown III. Stem paler cap, drying to Tawny Olive XXIX. Stem up to 3", equal, or attenuating up, ring, pallid, subsuperior, not striate. Not hygrophanous. Spores $7.5 \times 5.2 \mu\text{m}$,

oblique, rather ovate, dark yellow brown.

Collection: This collection consists of three fruit-bodies, each fairly substantial, clearly from among soil and moss and clearly not on wood. One of the dried fruit-bodies shows traces of a fine fibrillose ring.

Notes: Because of the rough spores with a plage and without a germ-pore, this collection is clearly a species of *Galerina* and not of *Pholiota*. Hence the identification as *Pholiota subpumila* is incorrect. The substantial fleshy habit and habitat on soil, not on wood, clearly point to a good collection of *Galerina unicolor* if that species is recognised as being separate from *Galerina marginata* (for discussion of this point, see Wood 2001).

21. *Galerina unicolor* AD-C 42548 (ADW 13728)

Microscopic details: Spores 9.3–10.5 x 5.7–6.3 μm , \bar{X} = 10.0 x 6.0 μm , Q = 1.68, elliptic to amygdaliform, plage smooth, often marked with abrupt margin, ornamentation moderately low, coarse, blunt, perispore obvious, thin, not swelling or loosening at all. Cheilocystidia and pleurocystidia not in good condition, sparse but clearly present, similar, narrowly lageniform, clearly not bifurcate.

Packet label:

Pholiota unicolor

Lawn 6/16 J.B.Cleland

+ Pencil annotation:

Galera

(probably Sydney NSW)

Cleland notes:

No macroscopic details

Spores yellow from 8.5 x 5.2 μm ?over 10.5 x 5.2 μm , ?oblique swollen hyphae

Collection: The collection consists of numerous fruit-bodies, in good condition, clearly fleshy, with moss and debris, and one fruit-body clearly on heavy bark, but substrate connection not clear for any of the other specimens.

Notes: On balance, this collection should be retained as *Galerina unicolor* since there is no certainty that the substrate was wood. But note that if consensus on species limits changes, this would become *Galerina marginata*.

22. *Pholiota unicolor* AD-C 42549 (ADW 13729)

Microscopic details: Spores 8.4–9.6 x 5.4–6.3 μm , \bar{X} = 9.0 x 5.9 μm , Q = 1.54, elliptic to amygdaliform, plage distinct, flat, smooth, with distinct rim, ornamentation low to very low, coarse, blunt, perispore mostly obvious, usually thick and somewhat swollen, some slightly loosening, but never calyptrate. Cheilocystidia and pleurocystidia sparse and difficult to find, but both clearly present and similar, narrowly lageniform, always simple, never bifurcate.

Packet label:

Pholiota unicolor

Mt. Wilson 6/6/15 J.B.Cleland

+Pencil annotation

Galerina

Mt. Wilson (NSW)

Kew No 24 Miss Clarke Watercolor No 85

Cleland notes:

Pholiota. Pileus at first deeply reddish tan, drying to pale brown, smooth, convex, umbonate, 1". Gills adnate, reddish brown, moderately close. Ring ?moderately distant, marked. Stem 1 1/2", slightly

THE CLELAND COLLECTIONS OF *GALERINA* (FUNGI)

attenuated upwards, base a little swollen, covered with whitish mealy fibrils, brownish below, solid. On a separate piece of paper: Spores 8.5 to 10.4 x 5.2 μm , oblique. Chrysalis-like. Brown.

Collection: A good collection of five fruit-bodies in good condition, all growing on old wood.

Notes: On balance, because of the substrate, this collection should be regarded as *Galerina marginata*, because the spores have a thick perispore and low wall ornamentation. The wood substrate is quite clear and underlines the species identification.

23. *Pholiota unicolor* AD-C 42550 (ADW 13730)

Microscopic details: Spores 8.7–9.9 x 5.1–6.6 μm , \bar{X} = 9.1 x 5.6 μm , Q = 1.63, ovoid to elliptic or amygdaliform, mostly with clear large smooth flat plage, with distinct rim, ornamentation low, a little narrow, blunt, perispore sometimes not obvious, often fairly thick and swollen and some with a slight degree of loosening. Cheilocystidia and pleurocystidia, sparse and difficult to recover, but both similar and clearly present, narrowly lageniform, always simple and never bifurcate.

Packet label:

Pholiota unicolor
Lisarow 5/8/16 J.B.Cleland

+Pencil annotations

Galerina
on trunks (fallen) Lisarow (NSW)

Cleland notes:

(Pileus) 3/4", nearly plane, dingy darkish brown and finely striate, drying to pallid brownish. Gills adnate, dingy cinnamon. Stipe dirty brown, fibrillose, ?streaked.
On trunks (fallen). Lisarow 5/8/16
Spores dull brown, oblique 8.5–9.0 x 4–5 μm .

Collection: The collection consists of eight small fruit-bodies in good condition, clearly attached to wood fragments. There is no visible annulus on the dried material. Habit naucorioid, but much smaller than the previous collections.

Notes: Since Cleland called this collection *Pholiota unicolor* one assumes the presence of some kind of ring and some degree of robust stature. If this is so, there is no reason for this collection not to be regarded as being *Galerina marginata* since it is clearly on wood.

24. *Pholiota unicolor* AD-C 42551 (ADW 13731)

Microscopic details: Spores 8.1–9.0 x 4.5–5.1 μm , \bar{X} = 8.4 x 4.8 μm , Q = 1.76, elliptic to amygdaliform, plage large, flat, smooth, mostly without a rim, ornamentation low, fairly fine, blunt, perispore thin, not very obvious, sometimes distinctly swollen and occasionally a little loosened. Cheilocystidia and pleurocystidia sparse, difficult to recover, but both clearly present and with similar morphology, narrowly lageniform. apex simple, never bifurcate.

Packet label:

Pholiota unicolor
Lisarow 5/8/16 J.B.Cleland

+Pencil annotations

Galerina
Scattered on fallen trunks Lisarow NSW

Cleland notes:

Pileus 1 1/4", convex acutely umbonate, watery yellow brown and edge finely striate, drying pallid brown, smooth. Gills moderately close, adnate with a decurrent tooth, pale cinnamon, becoming dingy

cinnamon. Stipe up to 1 1/2" ?slender, base somewhat swollen, pallid to brownish, fibrillose streaked. Ring superior, often slight.

Differs from *P. unicolor* in being larger, umbo marked, gills not triangular.

Collection: The collection consists of six fruit-bodies on wood or heavy bark.

Notes: The collections were made clearly from wood and the specimens are clearly somewhat fleshy. Though they appear larger than the previous collection, they probably are still smaller than many current collections. However, it should be regarded as a good collection of *Galerina marginata*.

25. *Psilocybe foenisecii* AD-C 5608 (ADW 13155)

Microscopic details: Spores 10.5–12.3 x 7.2–8.7 μm , \bar{X} = 11.6 x 7.7 μm , Q = 1.51, ovoid, wall distinctly thick, with small distinct germ-pore, distinctly and clearly smooth. Cheilocystidia present, ventricose, pleurocystidia absent.

Packet label:

Psilocybe foenisecii

Ryde NSW 27/5/16 J.B.Cleland

+Pencil annotations:

Galerina sp.

On roadsides

Cleland notes:

No macroscopic description present.

P. foenisecii ?. Spores dull dark brown not definitely purple, 8.5–10.5 , occasionally 12 x 5.2 to 7 μm

(Cap) brown and striate when moist, pallid white when dry.

On roadsides. Ryde 27/5/16

Collection: The collection consists of several small fruit-bodies in fairly good condition, on soil debris with some small plant material.

Note – AMY 1986 ‘not *P. foenisecii*, spores smooth, probably a *Galerina*.’

Notes: Clearly this collection matches the description of *Psilocybe korra* Grg. (See Grgurinovic 1997) There this collection is cited as the only other collection in addition to the type (AD-C 5609) from Adelaide. Other collections under the same name are correctly named *Panaeolus foenisecii*, which has verrucose spores, a cellular cap cuticle and different cystidia. That species is now usually regarded as *Panaeolina foenisecii*.

ACKNOWLEDGMENTS

The invaluable assistance of Graham Bell of the South Australian Herbarium (AD) in locating the specimens and providing important documentation is gratefully acknowledged. The assistance of Pam Catcheside in deciphering the handwriting of Cleland is also gratefully acknowledged. Financial assistance for this work by the Australian Biological Resources Study is gratefully acknowledged. Facilities for the later part of this work were kindly provided by Professor Anne Ashford.

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